

# SNZ 4052K

## TWO-HAND RELAY TYPE III C



### APPLICATIONS

- Protection of people and machinery
- Monitoring of two-hand applications
- Press
- According to EN 574 Type III C
- Up to PL e / Category 4 (EN ISO 13849-1)
- Up to SIL<sub>CL</sub> 3 (EN 62061)

### FEATURES

- Stop Category 0 according to EN 60204-1
- Two-channel actuation; 1 NO contact and 1 NC contact for each channel
- Cross monitoring
- Monitoring of synchronous activation
- 2 enabling current paths, 1 signaling current path

### FUNCTION

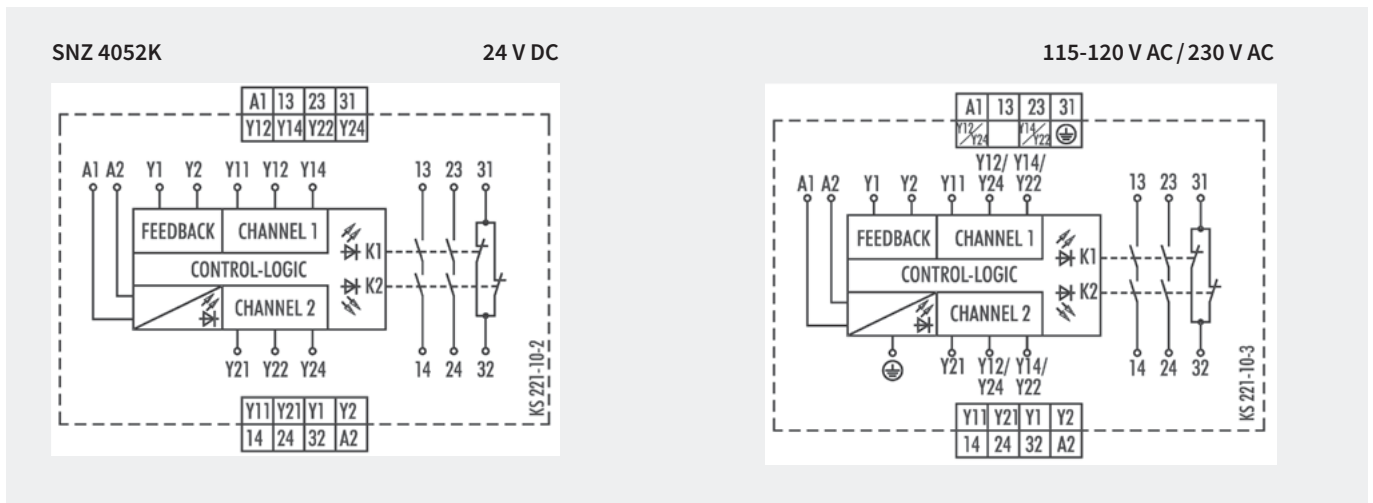
The device complies with EN 574 Type III C safety requirements. The safety behavior of the device is designed for applications according to Category 4 (EN 954-1). The device is single-fault safe and self-monitoring. Synchronous activation of both actuators (two-hand momentary contact or safety gate contacts) is monitored. Each of the two actuators is connected to the device with an NO contact and an NC contact. The technical design of the input circuit provides cross connection and ground fault monitoring. The output function is designed with 2 NO contacts as an enabling current path and 1 NC contact as signaling current path (all forcibly guided).

With supply voltage applied to terminals A1/A2 and the feedback loop (terminals Y1/Y2) closed, the enabling current paths are closed by simultaneously activating the actuators (S1+S2).

Both actuators must be activated within 0.5 s for the output contacts to be enabled. If only one of the two actuators is released, the device is immediately de-energized. The enabling current paths open.

The device can be restarted only after both actuators have returned to their initial position (for example when the two-hand momentary contact switches have been released) and the feedback circuit is closed again. The feedback circuit should only be opened again after both actuators are activated. Otherwise the device will remain in the OFF position. The current status of the device is indicated by 3 LEDs: application of the supply voltage with LED SUPPLY, activation of both actuators with LED K1 and additionally with LED K2 in case of synchronous activation.

### CIRCUIT DIAGRAM





## OVERVIEW OF DEVICES | PART NUMBERS

Type	Rated voltage	Terminals	Part no.	P.U.
SNZ 4052K-A	24 V AC/DC	Screw terminals, pluggable	R1.188.0530.1	1
	115 – 120 V AC	Screw terminals, pluggable	R1.188.0940.1	1
	230 V AC	Screw terminals, pluggable	R1.188.0950.1	1
SNZ 4052K-C	24 V AC/DC	Push-in terminals, pluggable	R1.188.2020.0	1

### TECHNICAL DATA

Function	Two-hand control relay		
Function display	3 LEDs, green		
<b>Power supply circuit</b>			
Rated voltage $U_N$	A1, A2	24 V AC/DC, 115-120 V AC, 230 V AC	
Rated consumption	24 V DC	2.4 W	
	115-120 V AC, 230 V AC	2.2 W / 3.1 VA	
Rated frequency	50 - 60 Hz		
Operating voltage range $U_B$	0.85 - 1.1 x $U_N$		
Electrical isolation supply circuit - control circuit	yes (at $U_N = 115-230$ V AC, 230 V AC)		
<b>Control circuit</b>			
Rated output voltage	Y12/Y14, Y22/Y24, Y1	24 V DC	
Input current / peak current	Y11, Y21	60 mA / 1000 mA	
	Y2	< 100 mA	
Response time $t_{A1} / t_{A2}$	40 ms		
Recovery time $t_W$	250 ms		
Release time $t_R$	50 ms		
Synchronous time $t_S$	$\leq 500$ ms		
Max. resistivity, per channel	24 V AC/DC	$\leq (2.5 + (1.176 \times U_B / U_N - 1) \times 50) \Omega$	
	115-120 V AC, 230 V AC	$\leq (2.5 + (1.176 \times U_B / U_N - 1) \times 50) \Omega$	
<b>Output circuit</b>			
Enabling paths	13/14, 23/24	normally open contact	
Signaling paths	31/32	normally closed contact	
Contact assignment	forcebly guided		
Contact type	Ag-alloy, gold-plated		
Rated switching voltage	enabling / signaling path	230 V AC	
Max. thermal current $I_{th}$	enabling / signaling path	6 A / 2 A	
Max. total current $I^2$ of all current path	( $T_u = 55$ °C)	9 A <sup>2</sup>	
Application category (NO)	AC-15	$U_e$ 230 V, $I_e$ 3 A	
	DC-13	$U_e$ 24 V, $I_e$ 2.5 A	
Short-circuit protection (NO), lead fuse / circuit breaker	6 A class gG / melting integral / < 100 A <sup>2</sup> s		
Mechanical life	10 <sup>7</sup> switching cycles		
<b>General data</b>			
Creepage distances and clearances between the circuits	EN 60664-1		
Protection degree according to EN 60529 (housing / terminals)	IP40 / IP20		
Ambient temperature / storage temperature	-25 °C - +55 °C / -25 °C - + 75 °C		
Wire ranges screw terminals,	fine-stranded / solid	1 x 0.2 mm <sup>2</sup> – 2.5 mm <sup>2</sup> / 2 x 0.2 mm <sup>2</sup> – 1.0 mm <sup>2</sup>	
	fine-stranded with ferrules	1 x 0.25 mm <sup>2</sup> – 2.5 mm <sup>2</sup> / 2 x 0.25 mm <sup>2</sup> – 1.0 mm <sup>2</sup>	
Permissible torque	0.5 - 0.6 Nm		
Wire ranges Push-in terminals	1 x 0.25 mm <sup>2</sup> – 1.5 mm <sup>2</sup>		
Weight	0.20 kg / 0.25 kg		
Standards	EN ISO 13849-1, EN 62061, EN 574		
Approvals	TÜV, cULus, CCC		